

Adolescent Bariatric Surgery: A life saving procedure or another failing technique?

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Obesity is the most common nutritional disorder among adolescents in the United States (Helmrath, Brandt, & Inge 2006). The complications and sequela of obesity trickle all the way down into my own family; making this epidemic both a national and a personal concern. Lacking effective modalities to treat obesity in children puts doctors and nurses at the forefront of the ethical dilemma of saving a child's life with a risky and poorly researched bariatric surgical procedure. The following information will dive into facts known about adolescent obesity in general, alternative treatments for obesity, the ethical dilemma experienced when deciding how and when to treat a child with bariatric surgery, and finally bariatric surgery benefits and complications. Informing the reader of the trend of treating adolescent obesity with bariatric surgery and the risks and benefits associated with treatment is the purpose of this paper.

Obesity Epidemic

Childhood obesity, now being classified as an epidemic in the United States, is showing a large increase in potentially life threatening associated diseases (Helmrath et al., 2006).

Body mass index (BMI) is the recommended screening tool for obesity in children. Children between the 85th and 95th percentiles are considered overweight and children above the 95th percentile are considered obese (Paoletti, 2007). The obesity epidemic taking place in America has a multi-factorial etiology including engorging in abundant, processed, and calorie dense food, leading an increasingly sedentary life style, and a genetic predisposition to being overweight (Helmrath et al., 2006).

Comorbidities

Obesity is becoming a life-threatening disease not only in adults, but now increasingly in children. Helmrath, Brandt, and Inge (2006) state "A dose-response relationship between BMI during young adulthood and the risk of death has been demonstrated, with extreme obesity resulting in a reduction of 20, 13, 5, and 8 years of life expectancy for black men, white men,

white women, and black women respectively” (p. 3). Type II diabetes mellitus and insulin resistance in children has been appearing at an alarming rate. Estimates are that up to one third of all children will develop type II diabetes mellitus in their lifetime (Helmrath et al., 2006). Atherosclerotic plaque has now been found in children as young as three years old, adding an additional problem onto the list of increasing rates of asthma, muscle and joint pain, hypertension, and sleep apnea (Ben-Sefer, Ben-Natan, & Ehrenfeld, 2009). Breast, colon, and kidney cancer have all been found at higher rates in obese adults. (Ben-Sefer et al., 2009).

Obese children are at higher risk for physical mental and social problems. Obese children engage in risk-taking behaviors, have negative body image, and lower self esteem when compared to non-obese children (Ben-Sefer et al., 2009). Health related quality of life studies found that obese children’s ratings were the same as children undergoing chemotherapy for cancer (Helmrath et al., 2006). Studies looking at long term implications of obesity give children a poorer outcome in social and academic attainment. This places them at a higher risk for mental health problems, including depression and suicide (McFadden, 2009).

Treatment Options

The current ideal method of treatment in childhood and adult obesity is decreasing calories and increasing caloric expenditure through behavior modification (Berkowitz & Borchard, 2009). Predictive factors of patients who are able to keep weight off long-term, are those who eat breakfast, control food portions, monitor their weight, exercise consistently, and do not engage in binge eating (Helmrath et al., 2006). The largest problems associated with these treatments are non-compliance and lack of necessary dedication. These often lead to treatment failure of behavioral modification therapies (Berkowitz & Borchard, 2009).

Prescription mediated weight loss is another treatment commonly looked to when dealing with adult and childhood obesity. Currently, the weight loss medication treatment of choice approved for treatment of obesity in children over 16 is sibutramine, a non-selective

inhibitor of serotonin, nor epinephrine, and dopamine (Helmrath et al., 2006). This medication, when combined with a comprehensive exercise, diet, and behavior modification program has shown to increase weight loss from a placebo group norm of 2.4kg to 10.3kg (Helmrath et al., 2006). Metformin has been used safely in obese adolescents suffering from polycystic ovarian syndrome and type II diabetes mellitus. This treatment will decrease body weight and insulin resistance with moderately successful results (Helmrath et al., 2006). Although some success is documented, these methods often do not produce a large enough change in weight and are associated with multiple side effects.

Bariatric Qualification Guidelines

Bariatric surgery is gaining popularity in the adult population, but is now also being performed on adolescents after multiple failed weight loss attempts. Physicians and nurses face many ethical dilemmas when families are requesting such a risky surgery (McFadden, 2009).

While the complications of obesity in children are well known, the complications of bariatric surgery are still relatively unknown. Currently there are no set guidelines directing physicians in how and when bariatric surgery is sanctioned. In 2007, the National Institutes of Health (NIH) announced that they would begin a five year observational study to assess the benefits and risks of bypass surgeries in children. This study would compare these results to adults who underwent the same procedure. They are following up to 200 children, ages 14 through 19, for 2 years following gastric bypass surgery to collect information about successes, risks, and complications of the surgery. At the conclusion, NIH will publish a set of guidelines for surgeons to follow for determining when a child qualifies for surgery (National Institutes of Health, 2007). While waiting for these risks and indications for surgery to be published, the American Pediatric Surgical Association (APSA) compiled a list of surgical guidelines (National Institutes of Health, 2007).

These indications complied by the APSA in general are much more conservative than those for adults and include comprehensive preoperative testing and postoperative follow up that assists with long term outcomes and complications (Helmrath et al., 2006). Preoperative preparation includes: identification of comorbidities, baseline lab tests, a sleep study to detect apnea, an abdominal ultrasound, and most importantly an extensive interview with a child psychologist (Helmrath et al., 2006). Part of the recommended preparation also consists of attending monthly adolescent support groups, and requiring the child to write a letter describing their indications for having bariatric surgery, long and short term complications of the surgery, dietary restrictions and expectations, and the life-long commitment required for this surgery (McFadden, 2009). The APSA stresses that the most important element of the guideline is using a multidisciplinary review board to deliberate before scheduling an adolescent for the procedure (McFadden, 2009). The type of boards recommended are only present in two United States hospitals, but have been useful in resolving controversial patient selection and treatment decisions (Helmrath et al., 2006). While awaiting published guidelines, multiple procedures are being performed without preoperative testing and adequate follow-up (National Institutes of Health, 2007).

Bariatric Benefits and Downfalls

When a child is finally approved for bariatric surgery, gastric bypass is the most commonly used method. If a patient complies with postoperative diet and exercise programs patients can expect to lose 50% to 70% of excess body weight and keep it off for at least 5 years (Camden, 2009). More importantly, reversal of nearly all previously found comorbidities is documented with marked improvement in health and long term prognosis (Camden, 2009). The ultimate success of the surgery depends on the child's ability to adhere to a distinctly changed and reduced diet. This is a major source of concern because children use food choice as a way of demonstrating independence. Nutritional deficiencies are also common if vitamin and protein

supplementation and the proper diet are not rigorously followed (Camden, 2009). Early complications that develop in the weeks following surgery are found in up to 5% of the patients. These include death, gastric distention, pulmonary embolism, anastomotic leak, and wound infection. Late complications that develop after several months include marginal ulcers, abdominal pain, bowel obstructions, biliary colic, cholelithiasis, and dietary complications (Camden, 2009). Complications have been reported in up to 41% of adult patients, but complication rates in children are largely unknown (Helmrich et al., 2006).

Conclusion

The most important point made by supporters of surgery is medication treatment and surgery only attempted if all other treatment modalities have failed (Paoletti, 2007). While highly controversial, bariatric surgery when studied has been the most effective treatment modality for childhood morbid obesity, but consequently also poses the largest risk (Camden, 2009). Studies of the risks and benefits of gastric bypass are currently being performed and need to be examined upon release to determine if the benefits of this uncertain surgery outweigh the risks associated, then indicators for surgery should be nationally published. Additional studies in the area of long term outcomes and consequences are crucial due to the complexity of the surgery and unique psychological and physical issues that adolescents face (Paeletti, 2007).

It is important for nurses and doctors to remember that this procedure is not a quick fix for childhood obesity. This type of surgery needs to be taken on by a multidisciplinary team in centers of expertise. As nurses, we must remember that although we do not decide the specific treatment for morbidly obese adolescents case by case, we can affect the largest proportion of people by working at the community level to provide education and physical activities for families to prevent childhood obesity. Primary prevention through physical exercise education and healthy eating techniques holds the most potential for change in the number of children suffering from obesity (Berkowitz & Borchard, 2009). Shifting from treating the individual

child to promoting health in the population will decrease health care costs long-term and reduce deadly comorbidities associated with childhood obesity (Berkowitz & Borchard, 2009).

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